

dorsal are produced, and none of them are longer than the longest rays of the second dorsal. The longest anal ray is not much more than half as long as the longest dorsal ray, and equals half the length of the pectorals. The length of the anterior dorsal base is about equal to that of the snout; the second dorsal base is about  $2\frac{1}{2}$  times as long as the ventral fin.

The length of the middle caudal rays is contained 8 times in the total length without caudal.

The typical specimens are 13 inches,  $13\frac{1}{2}$  inches, and 14 inches long, respectively.

*Radial formula.*—B. VII; D. 10, 60-63; A. 53-54; P. 15.

There are 21 or 22 rows of scales between the anterior dorsal and the lateral line, and about 155 along the lateral line.

*Color.*—Brown, with some light spots on the second dorsal and the sides; the anal fin and the two dorsals margined with darker brown.

2. *Phycis regius* (Walb.) Jor. & Gibb.

Col. Marshall McDonald, among numerous interesting forms of southern fishes, has recently secured 6 specimens of this species of *Phycis*, which were taken in a haul seine, March 26, 1880, at the mouth of the Cape Fear River, in North Carolina. These are numbered 90 in his collecting invoice. *Phycis regius* has not been recorded so far south before; specimens have been taken in York River, a tributary of Chesapeake Bay. The discovery of two gadoids as far south as the Cape Fear and Charleston is quite unexpected.

U. S. NATIONAL MUSEUM,  
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**DESCRIPTION OF A NEW SPECIES OF SEBASTICHTHYS (SEBASTICHTHYS MINIATUS), FROM MONTEREY BAY, CALIFORNIA.**

By **DAVID S. JORDAN** and **CHARLES H. GILBERT.**

*Sebastichthys miniatus* sp. nov.

Allied to *Sebastichthys pinniger* Gill.

Body oblong, the form much as in *S. pinniger* and *S. atrovirens*; the caudal peduncle rather stouter than in *pinniger*. Head moderate, somewhat pointed, the profile not very steep. Mouth rather large, the maxillary reaching to opposite the middle of the pupil, the premaxillary in front on the level of the lower edge of the pupil. Lower jaw projecting somewhat beyond the upper, with a rather conspicuous symphyseal knob, which is larger than in *pinniger*. Middle of lower jaw elevated, so that the mesian teeth are much raised, and fit into an emargination

of the upper jaw. This elevation is much more marked in the present species than in *pinniger*.

Head more completely scaly than in related species, the scales also rougher, the scales on the mandible, snout, preorbital, and head generally being fully ctenoid. In *S. pinniger* the scales on nearly all parts of the head are cycloid. Mandible scaled even to the symphyseal knob. Interopercle fully scaled; most of the branchiostegals with series of scales. Maxillary, preorbital, and tip of snout fully scaled. Preorbital with a narrow neck, and two distinct spines, the neck less than one-fourth the diameter of the eye, which is of moderate size, about as in *pinniger*.

Spinous ridges on top of head low and small. The following pairs of spines are present: Nasal, preocular, supraocular, postocular, tympanic, and occipital, six pairs in all.

Interorbital space very broad and almost flat, a slight depression on each side of the supraocular ridge, between which depressions is a slight convexity.

In *S. pinniger* the interocular space is notably narrower, and both depressions and concavity are more marked. Space between occipital ridges slightly convex. In *S. pinniger* this is slightly concave.

Preopercular spines rather long and sharp, the second the longest and sharpest, the spines radiating and having less of a backward direction than in *S. pinniger*.

Opercular spines sharp. Spines on subopercle and interopercle moderate. Two suprascapular spines and a rudiment of a third.

Scales large, in about 47 transverse rows; the accessory scales few.

Dorsal fin low, rather deeply emarginate, essentially as in *S. pinniger*, but both spines and soft rays somewhat higher, the latter a little higher than the spines. Caudal fin lunate. Anal fin rather high, the second spine about as long as the third and rather stouter, little more than half the height of the soft rays. Pectoral fin moderate, as in *pinniger*, the tip reaching about to the vent, the base rather narrow, and the rays not fleshy. Ventrals, as in *pinniger*, very long, reaching past the vent almost to the beginning of the anal.

Dorsal rays XIII, 14; A. III, 7.

Gill-rakers, as in *pinniger*, very long and slender, about 10 + 22 in number, the longest about  $\frac{2}{3}$  the diameter of the eye.

Color darker than in *pinniger*, deep red, strictly speckled with dusky. Above bright deep vermilion, mottled with flesh-color on the sides, the belly light red. Back and sides everywhere with clusters of black dots, so that the whole body has a dusky shade. Top of head and back with vaguely defined cross-blotches made of dark points on snout, interorbital space, occiput, under fourth dorsal spine, under eighth dorsal spine, one under first soft ray, last soft ray, and base of caudal. Three obscure orange stripes radiating from the eye. Maxillary with a red streak.

Lips red, mottled with blackish. Under side of head light red, mottled with darker. Inside of mouth red.

Fins all bright vermilion; spinous dorsal spotted with olive-gray below, the membrane posteriorly edged with blackish; soft dorsal spotted below with blackish, a vertical dark olive streak on each membrane; other fins tipped with blackish, the membranes more or less dotted. No black blotch on the spinous dorsal; no distinct pale streak along the lateral line.

The coloration of *Sebastichthys pinniger*, which has thus far never been described, is as follows:

Ground color light olive-gray, profusely blotched with bright clear orange-red, the red shades predominating above, the pale below. Belly nearly white. Top of head with cross-blotches and marblings of orange, alternating with pale. Sides of the head flesh-colored, with three bright orange bands radiating from the eye; maxillary with orange touches. Lips pale, tinged with blackish. Inside of mouth pale.

Dorsal fin with the membranes bright orange, a large black blotch occupying the membranes between the seventh and tenth dorsal spines; this spot is usually distinct, but in old examples it is sometimes obsolete. Pectorals light red, mottled with yellowish. Other fins all bright orange, without dusky tips, slightly mottled with paler at base. Lateral line running in a distinct continuous light-gray streak, which is not crossed by the red markings.

*S. miniatus* was first known to us from two specimens taken at Santa Barbara. These were provisionally considered as representing a variety of *pinniger*, but after the examination of an extensive series of specimens from Monterey Bay we were forced to the conclusion that the deep-red forms, although nearly allied to *S. pinniger*, belong to a distinct species. The difference in color is very marked and the two species may be separated at sight. In life any of the numerous species of this genus may be at once recognized by the color alone, a feature which, circumstances of age and surroundings being equal, is in this group remarkably constant.

This species reaches the same size as *S. pinniger*, and is brought with it to the San Francisco market, but in much less abundance.

In the description already published by us of *Sebastichthys proriger* the specimen measured as "*S. pinniger*" belongs to the present species.